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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,272	05/07/2001	Yasuhiro Yoshida	1035-321	8246

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER	
SAJOUS, WESNER	
ART UNIT	**PAPER NUMBER**
2676	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/849,272	YOSHIDA ET AL.	
	Examiner	Art Unit	
	Wesner Sajous	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2005* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-17,20 and 24-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6,9,11-15,17,20,24-31 and 35-41* is/are rejected.

7)☒ Claim(s) *7,8,10,16 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8/16/05* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Remark

This communication is responsive to the reply filed on 12/22/05. Claims 2-17, 20, and 24-41 are presented for examination.

Response to Arguments

1. Applicant's arguments with respect to claims 2-17, 20, and 24-41 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2-5, 9, 17, 20, 24-28, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akira (Pat. No. JP05007219) in view of Nagaora Jun (JP publication number: 05-006159) and further in view of MacKinnon (US 20020012461).

Considering claim 3, Akira discloses an image display device (fig. 1) comprises an image display section (*e.g., screen display section, see line 4 of abstract*) for displaying an image in accordance with an input of a chrominance signal (*which is inherent in Akira. The Applicant should note that the input chrominance signal corresponds with the extracted Red or green or blue signal from the video signal that*

will be sensed by the sensors 8, 9, and 10, for RGB colors has chromaticities; i.e., chrominance signals. In addition, the outcome of detected RGB signals, as depicted in fig. 1, is to provide a chrominance video signal as input to the color recovery circuit {6} for further color processing or conversion. See "constitution", lines 1-7 and page 2 of the attached English abstract.) In addition, Akira discloses a chrominance signal converter (as characterized by the functions of devices 1-7) for converting the chrominance signal to be inputted into the image display section, in accordance with light characteristics of external light that strikes onto the image display section (see abstract).

Akira fails to particularly disclose a target display color setting section that uses information regarding light characteristics of external light for setting a color to display as an image, which agrees with human chromatic adaptation characteristics by referring to tristimulus values of light to which a human vision system adapts as the external light changes.

Nagaora, in a similar art, teaches the equivalence for a target display color setting section (e.g., items 4 and 5) for using information regarding light characteristics of external light for setting a color to display as an image, which agrees with human chromatic adaptation characteristics by referring (*via memory 6*) to tristimulus values (*e.g., adjusting values such as color tone, brightness and contrast of the image and reference*) of light to which a human vision system adapts as the external light changes. See "Constitution" section of the reference. (It is to be noted that since the condition of the image plane is automatically adjusted due to the condition of detected surrounding

light, such a condition encompasses a visual result that is not effected by a change in illumination light).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display system of Akira to include the features of Nagaora, in order to provide a display device capable of softly changing the condition of an image plane suitable for using environment or liking of individual users.

The combination of Akira and Nagaora fail to specifically describe that chromaticity coordinates values of the 3 primary colors are determined from external light from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

However, those of artisan skilled in the art, at the time of the invention, when considering both of the Akira and Nagaora references, would have find it obvious to determine chromaticity coordinate values of RGB colors for external light from optical and external light wavelength distribution characteristics. For, wavelength distribution characteristics are typical characteristics of external so as to provide an easy identification of external light, as this well known in the art, since the human color vision is trichromatic and can detect wavelengths of the 3 primary colors when viewing a display image. As per the optical wavelength distribution characteristics, it is noted that any display device that can be strike by an external light source are intrinsic to wavelength characteristic distribution and, if the display is a liquid crystal with an interior image display strike by light source, it is also intrinsic to optical wavelength distribution

characteristics. For, if the wavelength distribution characteristics for external light are known, the optical wavelength distribution characteristics are also known. Please note that a LCD display is an optical device for it comprises an optical relay system that accepts illumination energy or wavelength from an external light.

In addition, MacKinnon discloses uses external light and optical wavelength distribution characteristics to determine chromaticity values of primary colors and to perform correction on the chrominance signal so that image display is carried out based on the chromaticity coordinates. See paragraphs 48, 62 and 75-78.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display systems of Akira and Nagaora to include the wavelength distribution characteristics and chrominance signal correction in the same conventional manner as taught by MacKinnon, so as to control the apparent color of an item under different lighting or display conditions, hence providing an accurate color for the display device. See MacKinnon's abstract and paragraph 16.

Re claim 2, Akira discloses a sensor (*e.g., item 8 or 9 or 10*) for sensing the light characteristics of the external light (see abstract), wherein the chrominance signal converter (1-7) converts the chrominance signal (*R, G, or B or the video chrominance signal, see abstract page 2*) into a chrominance signal of a color (*e.g., R-Y or B-Y or G-Y, see fig. 1*) suitable for an output of the sensor (e.g., either of items 8-9).

As per claim 4, Akira discloses the chrominance signal converter (1-7) includes a color reproduction section (7) for reproducing the color to display by using three primary colors (e.g., RGB colors) having chromaticities suitable for the external light the

chrominance signal converter (1-7) converting the chrominance signal into a chrominance signal of a color (*e.g., R-Y or B-Y or G-Y, see fig. 1*) suitable for an output of the sensor.

The invention of claim 5 contains limitations that are substantially analogous in functions to the image display device recited in claims 3 and 4, respectively. As limitations of claims 3-4 have been found to be obvious over the combined teachings of Akira, Nagaora and MacKinnon, it is readily apparent that the applied prior art perform the underlying functions. As such, the limitations recited in claim 5 are rejected for the same reasons set forth for claims 3-4.

The invention of claim 17 is an apparatus performing the same function as the image display device of claim 1; it is, therefore, subject to rejection under the same reasons and rationale set forth for claim 1.

The invention of claim 9 contains features that are analogous to the limitations recited in claim 5. As the limitations of claim 5 have been found obvious over the combined teachings of Akira, Nagaora and MacKinnon, it is readily apparent that the applied prior art performs the underlying elements. As such, the limitations of claim 9 are rejected under the same rationale as claim 5. In addition, Nagaoka discloses a memory *(6)* the light characteristics of a plurality of types of the external light (*e.g., color tone, brightness and contrast of the image and reference*) and read out from the memory the selected light characteristics. See the "Constitution" section of the reference.

Claim 20 contains features that are analogous to the limitations recited in claim 9; it is, therefore, rejected under the same rationale as claim 9.

As per claim 24, the embodiment of Akira is intrinsic to the conversion of the chrominance signal is carried out based on a color to display, which is set according to the light characteristics of the external light (as characterized by the depiction at lines 1-3 in Akira) and in consideration of color adaptation characteristics of human (*e.g., as color change in a visual sense of the displayed color, as depicted in Akira. See abstract*).

As per claim 25, Akira discloses the chrominance signal converter (1-7) includes a color reproduction section (7) for reproducing the color to display by using three primary colors (e.g., RGB colors) having chromaticities suitable for the external light the chrominance signal converter (1-7) converting the chrominance signal into a chrominance signal of a color (*e.g., R-Y or B-Y or G-Y, see fig. 1*) suitable for an output of the sensor.

The limitations of claim 26 recites features that are analogous to the limitations of claims 20 and 25; they are therefore, rejected under the same rationale.

Claim 31 recites features equivalent to claim 20; it is, therefore, similarly rejected.

Re claims 27-28, the claimed "means comprises a sensor for supplying the information regarding the light characteristics" is met by Akira's items 8-9 of fig. 1.

Claim 36 recites features equivalent to claim 3; it is, therefore, similarly rejected.

Re claims 37-38, the claimed "means comprises a sensor for supplying the information regarding the light characteristics" is met by Akira's items 8-9 of fig. 1.

4. Claims 6, 29-30, 35, 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akira (Pat. No. JP05007219) in view of Takahashi (JP publication number: 09-215000).

Considering claim 6, Akira discloses most claimed features of the invention (see claim 3), however, Akira fails to teach using a generated color correction coefficient, in accordance with light characteristics of the external light, for correcting chrominance signal.

Takahashi teaches the equivalence for using a generated color correction coefficient (e.g., white balance coefficient), in accordance with light characteristics of the external light, for correcting chrominance signal. See abstract/problem and solution.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Akira to include the color correction coefficient generator in the same conventional manner as taught by Takahashi, in order to provide an image processing method by which images are provided while considering the color rendering property of a light source and human color sensing characteristics. See abstract/problem to be solved.

The combination of Akira and Takahashi fail to specifically describe that chromaticity coordinates values of the 3 primary colors are determined from external light from wavelength distribution characteristics of external light and optical wavelength distribution characteristics, and correction is performed on the chrominance signal so that image display is carried out based on the chromaticity coordinates.

However, those of artisan skilled in the art, at the time of the invention, when considering both of the Akira and Nagaora references, would have find it obvious to determine chromaticity coordinate values of RGB colors for external light from optical and external light wavelength distribution characteristics. For, wavelength distribution characteristics are typical characteristics of external so as to provide an easy identification of external light, as this well known in the art, since the human color vision is trichromatic and can detect wavelengths of the 3 primary colors when viewing a display image. As per the optical wavelength distribution characteristics, it is noted that any display device that can be strike by an external light source are intrinsic to wavelength characteristic distribution and, if the display is a liquid crystal with an interior image display strike by light source, it is also intrinsic to optical wavelength distribution characteristics. For, if the wavelength distribution characteristics for external light are known, the optical wavelength distribution characteristics are also known. Please note that a LCD display is an optical device for it comprises an optical relay system that accepts illumination energy or wavelength from an external light.

In addition, MacKinnon discloses uses external light and optical wavelength distribution characteristics to determine chromaticity values of primary colors and to perform correction on the chrominance signal so that image display is carried out based on the chromaticity coordinates. See paragraphs 48, 62 and 75-78.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display systems of Akira and Nagaora to include the wavelength distribution characteristics and chrominance signal correction in

the same conventional manner as taught by MacKinnon, so as to control the apparent color of an item under different lighting or display conditions, hence providing an accurate color for the display device. See MacKinnon's abstract and paragraph 16.

Considering claim 35, Akira discloses most claimed features of the invention (see claim 3), however, Akira fails to teach using a generated color correction coefficient, in accordance with light characteristics of the external light, for correcting chrominance signal.

Takahashi teaches the equivalence for using a generated color correction coefficient (e.g., white balance coefficient), in accordance with light characteristics of the external light, for correcting chrominance signal. See abstract/problem and solution.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Akira to include the color correction coefficient generator in the same conventional manner as taught by Takahashi, in order to provide an image processing method by which images are provided while considering the color rendering property of a light source and human color sensing characteristics. See abstract/problem to be solved.

Re claims 29-30, the claimed "means comprises a sensor for supplying the information regarding the light characteristics" is met by Akira's items 8-9 of fig. 1.

Claim 39 contains features that are substantially analogous to the limitations recited in claim 6; it is, therefore, subject to rejections for the same reason and rationale set forth for claim 6.

Re claims 40-41, the claimed "means comprises a sensor for supplying the information regarding the light characteristics" is met by Akira's items 8-9 of fig. 1.

5. Claims 11-15, 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akira in view of Jiyuen (JP 410191378A), and further in view of Hung, as applied to claim 9 and further in view of Miyawaki.

As per claim 11, Akira and Jiyuen render obvious most claimed features of the invention, as applied to claim 9, but they fail to teach the chrominance signal converter that includes a display target color setting section that sets a color to display based on light characteristics of external light.

Miyawaki, in a similar art, teaches the equivalence for a target display color setting section that uses information regarding light characteristics of external light for setting a color to display based on light characteristics of external light. See figs. 10(d-f), and col. 10, lines 39-67, and col. 11, lines 15-63.It is noted that since the image processing in Miyawaki is performed according to a visual line sensing the direction of a visual line of the operator (seecol.2, lines 35-44), the inputted or selected color to the display the image must meet the operator chromatic adaptation characteristics, as claimed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Akira and Jiyuen to include the display color setting section as taught by Miyawaki's col. 10. The purpose is to enable

the user operator to adjust the focus areas around the image that is processed for display, in order to improve image quality. See Miyawaki's col. 2, lines 6-18.

As per claim 12, Akira and Jiyuen render obvious most claimed features of the invention, as applied to claim 9, but they fail to teach the chrominance signal converter that includes a color reproduction section for reproducing he color to display by using three primary colors having chromaticities suitable for the light characteristics.

Miyawaki, in a similar art, teaches the equivalence for the chrominance signal converter (see fig. 11) that includes a color reproduction section (107) for reproducing he color to display by using three primary colors (108) having chromaticities suitable for the light characteristics. See fig. 11, and col. 10, lines 39-67, and col. 11, lines 15-63.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Akira and Jiyuen to include the display color setting section as taught by Miyawaki's col. 10. The purpose is to enable the user operator to adjust the focus areas around the image that is processed for display, in order to improve image quality. See Miyawaki's col. 2, lines 6-18.

Claim 13 contains limitations that are substantially analogous to the limitations recited in claim 9; it is, therefore, rejected under the same rationale. In addition, Miyawaki discloses a chrominance signal converter (fig. 11) including the target display color setting section (119), the sensor (117), the color display reproduction section (102-104), and the three primary colors (108).

As per claim 14, Akira and Jiyuen render obvious most claimed features of the invention, as applied to claim 9, but they fail to teach a sensor for sensing the light

characteristics of external light and a chrominance signal converter that selectively performs conversion of a chrominance signal based on an output of the sensor or based on light characteristics of external light selected from the memory.

Miyawaki, in a similar art, teaches the equivalence for a sensor (117, fig. 11) for sensing the light characteristics of external light and a chrominance signal converter (102) that selectively performs conversion of a chrominance signal based on an output of the sensor or based on light characteristics of external light selected from the memory. See fig. 11, and col. 10, lines 39-67, and col. 11, lines 15-63.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the features of Akira to include the display color setting section as taught by Miyawaki's col. 10. The purpose is to enable the user operator to adjust the focus areas around the image that is processed for display, in order to improve image quality. See Miyawaki's col. 2, lines 6-18.

Claim 15 is noted to recite features that are analogous and necessary to perform the method of claim 9 and 14. As the features of claims 9 and 15 have been found to be obvious over the combined teaching of Akira, Jiyuen and Miyawaki, it is readily apparent the applied prior art perform the underlying function. As such, the limitation of claim 15 is rejected under the same rationale as claims 9 and 15. It is further noted that in Miyawaki since the operator controls how the image is to be outputted, such may cause the illuminance output to exceed a certain value in order for the display device to display an image with high quality.

Claim 33 recites features equivalent to claim 11; it is, therefore, similarly rejected.

Claim 34 recites features equivalent to claim 12; it is, therefore, similarly rejected.

Allowable Subject Matter

8. Claims 7-8, 10, 16, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, because the prior art of record fail to teach or suggest an image display device that comprises a sensor that has a function to resolve wavelength characteristics into at least two different types of wavelength regions, and measures wavelength characteristics of external light, based on output values in the respective wavelength regions (as recited in claim 8); a memory that stores wavelength characteristics of more than two types of wavelength regions of the external light...in accordance with a combination of the stores wavelength characteristics (as recited in claims 10 and 32); and store in advance a plurality of types of characteristics of external light and a plurality of color correction coefficients that vary depending on the light characteristics of external light; and a chrominance signal converter that includes a color correction coefficient generator for reading out a color correction coefficient stored in the memory, based on the selected light characteristics of external light, and a color correction section that corrects chrominance signal by using the color correction coefficient read from the memory (as recited in claim 16).

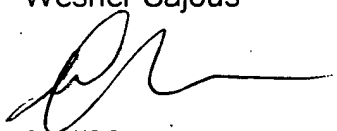
Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sajous Wesner whose telephone number is 571-272-7791. The examiner can normally be reached on Mondays thru Fridays between 10:30 and 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tung kee can be reached on 571-272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wesner Sajous



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